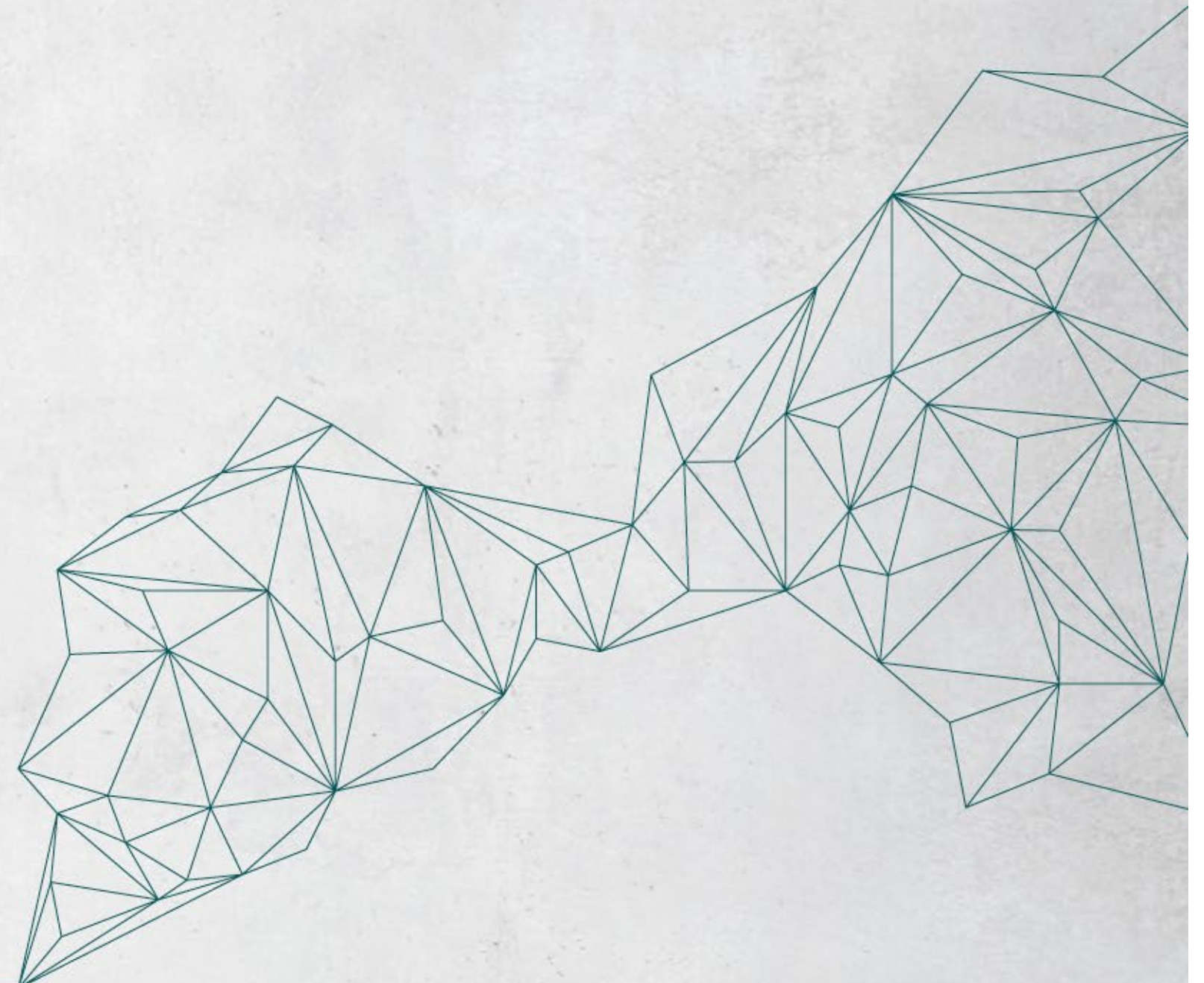


HALL 7A

Chillventa Specialist Forums 2024

Chillventa Fachforen 2024

**CONNECTING
EXPERTS.**





2024
Chillventa

EXCLUSIVE

9th October 2024

Hall 7A / 7A-638

Nürnberg Messe GmbH, Messezentrum 1

**Discover robust CO₂ solutions for diverse applications,
shaping the future of refrigeration**

CARRIER

COMMERCIAL
REFRIGERATION





Innovating the Cold Chain with Future-ready Refrigeration

Natural Refrigerants and Sustainable Solutions

CCR's products, such as display cases and cold storage systems, use natural refrigerants to comply with FGAS and potential PFAS regulations, focusing on energy efficiency and sustainability.

Collaboration with Haier Group

Following its integration into Haier, CCR will collaborate to enhance the global cold chain, combining expertise to advance technology, sustainability, and innovative refrigeration solutions.

Expertise in Cold Chain Systems

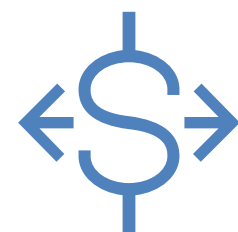
CCR designs and manufactures sub-systems (e.g., heat exchangers, compressors, cabinets) for cold food chains, covering temperatures from -50°C to +20°C, with a focus on natural refrigerants.





#1

Market Position in EMEA



\$1.1bn

2023E Revenue



\$41bn

Global Addressable Market
in 2028



~1,300+

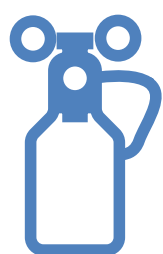
Customers Globally



~85,000

Global Installations

A global presence, a sustainable impact.



>23,000

CO₂ Mechanical Systems
Installed in EMEA by CCR



~10,000

Sites Monitored Online
Globally



~92%

EMEA Service Conversion
Rate



~2,300

Global Base of Service
Technicians



~4,000

Full-Time Equivalent
Employees Globally



4,000
TOTAL EMPLOYEES



PRESENT IN **24** COUNTRIES

4 
FACTORIES
(Myto CZ, Aubagne FR,
Jasz HUN, Qingdao
China)

2 **ENGINEERING
CENTERS**
(Mainz, GER
Shanghai, China) 

1 **Global Customer
Experience
Centre**
(Mainz, GER) 

1 **COOL₂academy**
(Mainz, GER) 

1 **Distribution Centre**
(NCR. INDIA) 

Our Footprint in Refrigeration



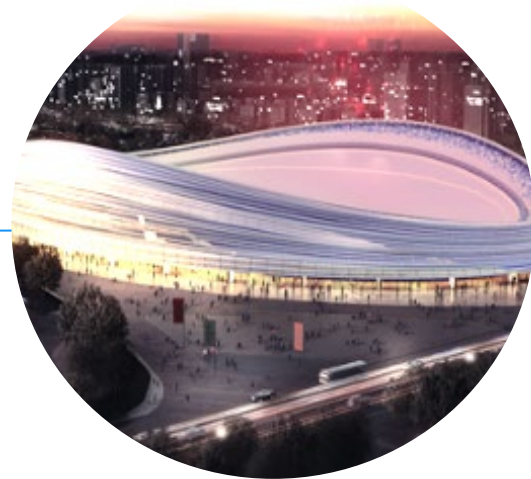
10,000+

Sites remotely
maintained



9,000 +

Connected
Stores



1,5 MW

CO₂ Refrigeration and
Heating Capacity



700+

Top-trained
Technicians



A robust CO₂ portfolio for diverse applications

Retail Solutions



Supermarkets, Hypermarkets, Discount Stores



Convenience Stores



Gas Station Stores

Logistics and Cold Storage



Distribution Centers



3PL Facilities and Warehouses



Dark Stores for eCommerce

Industrial & Processing



Produce Storage and Packaging

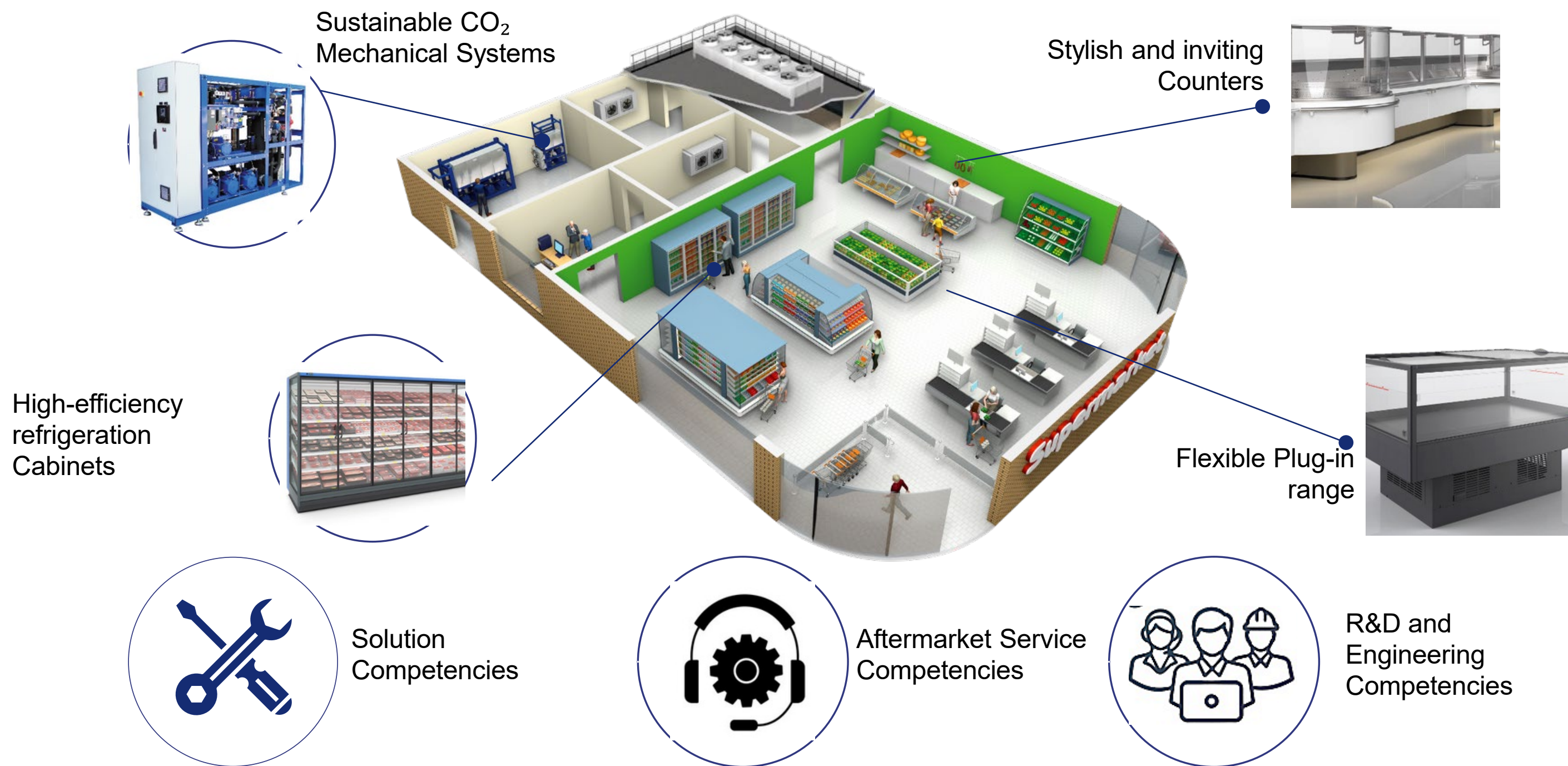


Meat Processing



Dairy Products

CO₂ expertise for optimal TCO solutions

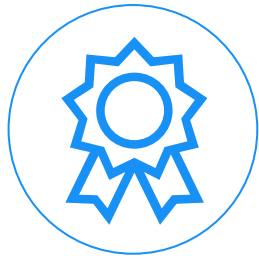


End-to-end solutions across all product life stages

Pre-Installation

End-to-End Solution Engineering + Service

End of
Life



Setting
Standards
for the Industry



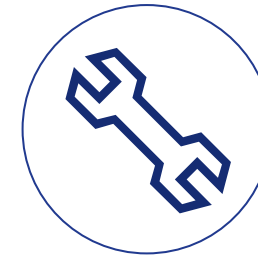
Proactive In -
House R&D +
Manufacturing
and Assembly



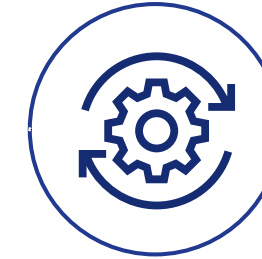
Invitation to
Tender



Design, Site
Configuration,
Planning and
Procurement



Installation



Aftermarket –
Modernization
and Services








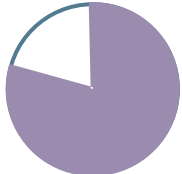
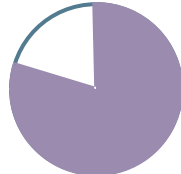
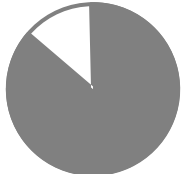
Recycle / Reuse /
Circular End of
Life Alternatives

2 – 6 weeks

8 – 20 weeks

6 – 10 weeks

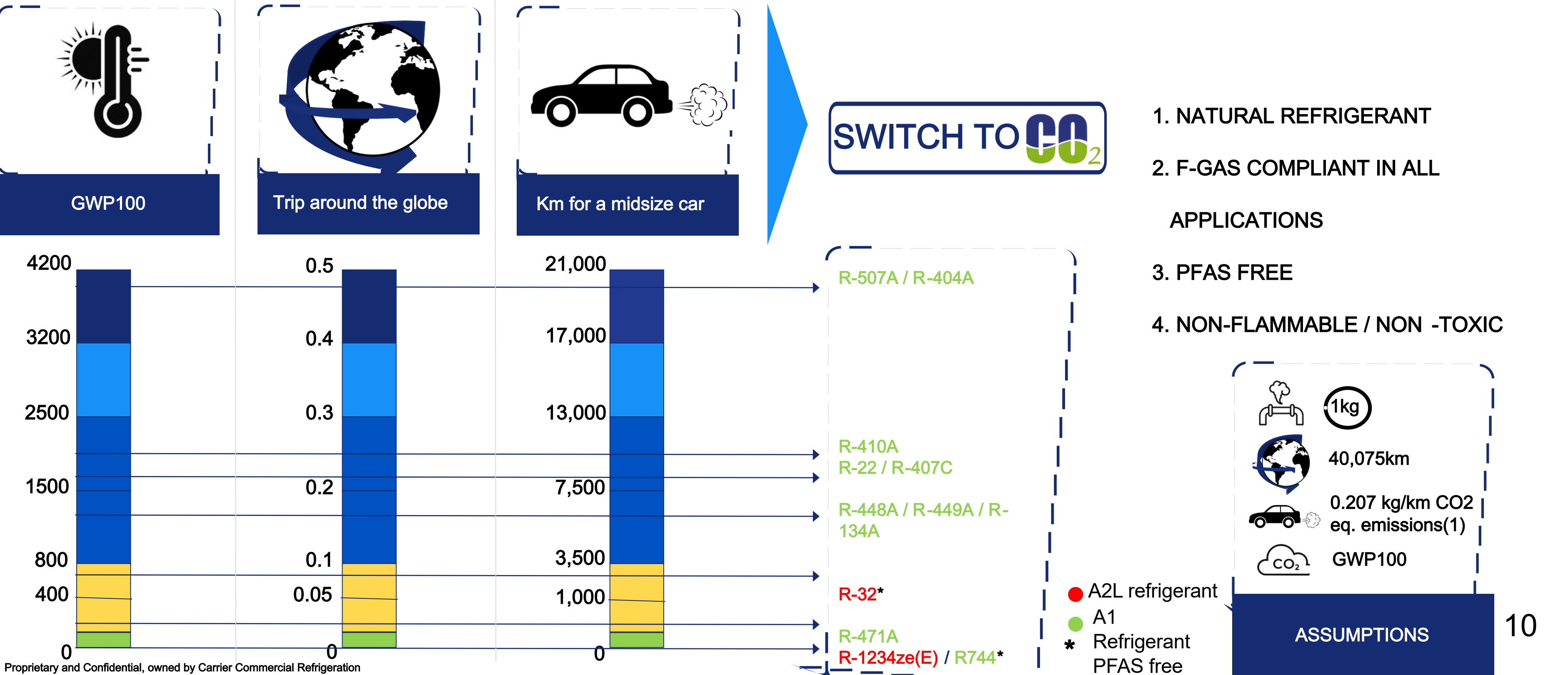
Sustainability regulations are driving global transformation, with CO2 adoption facilitating efficient fleet management

	EMEA		APAC		North America
Regulation					
	F-Gas	Energy Labelling	HFC Reduction under Kigali		HFC Reduction ⁽¹⁾
Reduction Target	 <i>2/3rd reduction compared to 2014 levels by 2030</i>	N/A <i>Enforced Sep'23</i>	 <i>80% reduction compared to 2022 levels by 2045 in China</i>	 <i>80% reduction compared to 2025 levels by 2047 in India</i>	 <i>85% reduction compared to baseline levels by 2036</i>

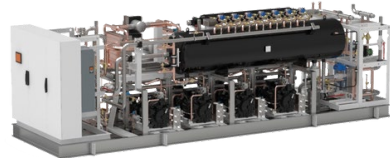
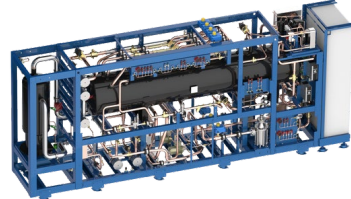
1






Under CARB, SNAP and PFAS.

1 kg of leaked refrigerant is equivalent to driving a car for up to 21,000 km



Sustainable Innovation to for a safer future to come



	PETROL STATION SH	CONVENIENCE STORE	SUPERMARKET	SMALL WAREHOUSE HYPERMARKET	LARGE WAREHOUSE
CO ₂ Emission reduction(1)	94 tonnes	650 tonnes	3,177 tonnes	5,189 tonnes	16,326 tonnes
Equivalence in km driven(2)	452 km	3,138 km	15,345 km	25,068 km	78,870 km
Trips around the globe(3)	 X 0.8	 X 5	 X 25	 X 42	 X 131



CO₂ VS traditional hydrofluorocarbon system



15 years



0.207 kg/km CO₂ eq. emissions



15,000km/year driven



40,075km

(1) The simulation model is based on the Total Equivalent Warming Impact reduction, which is assessing the global warming impact by combining refrigerant loss during lifetime of 15years , refrigerant end of life loss (recovery losses during dismantling), savings due to heat recovery and heat pump function, as well as the impact of power consumption of the equipment. All the figures are indicative and based on typical store layout for the selected type. (2) based on car emissions of 0.207kg/km CO₂ equivalent (medium size car) multiplied by 15 years Source: Probas Database. (3) Based on a car as of (2) considering a trip around the globe of 40,075km for 15years

Innovation is our DNA, driving improvements in energy efficiency and supporting our users ESG agenda

COOLtec[®]Evo



INNOVATION

60+ Granted Patents
Includes Modulating Vapour Ejector
& CO₂ pump

FOR MORE ENERGY SAVING

up to 30%
annual rack energy savings¹
vs initial transcritical CO₂
(mild climate)
+
HEAT RECLAIM

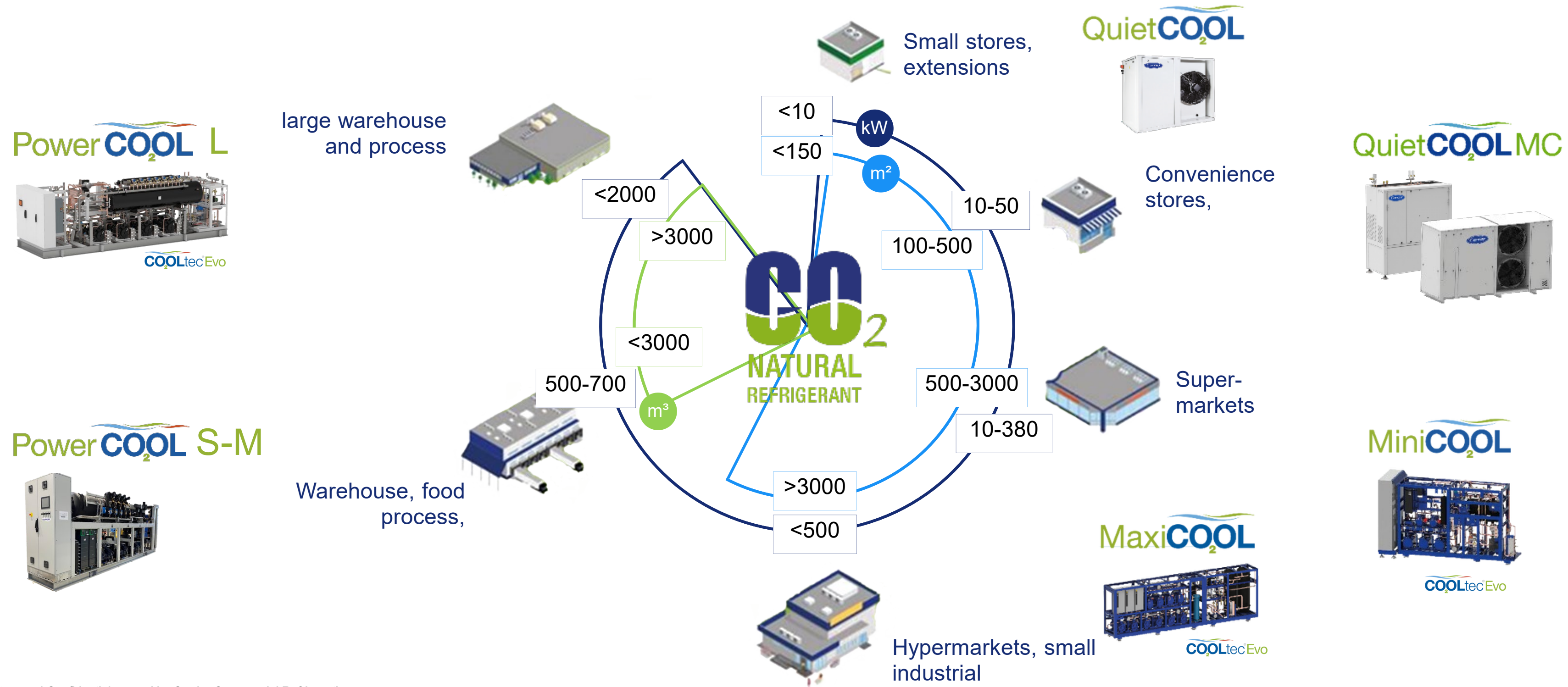


1 Annual energy saving, for rack only. Based on model store in mild climate, compared to 1st generation transcritical system.

CO₂ PROJECT EVOLUTION

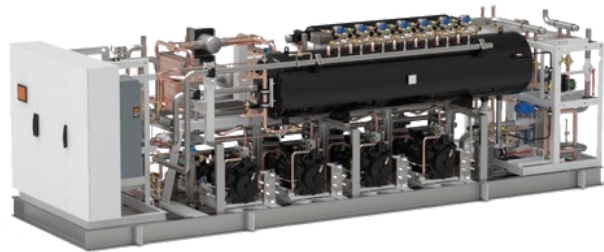
- 1998
1st Subcritical CO₂ Installation
- 2002
1st Transcritical CO₂ Installation
- 2009
CO₂OLtec[®] system launch
- 2014
1st Ejector Unit
- 2019
New CO₂OLtec[®] EVO systems
- 2020
CO₂OLtec[®] EVO for small supermarkets <100KW

Find your CO₂ refrigeration solution, from small to high capacities, for a wide range of applications

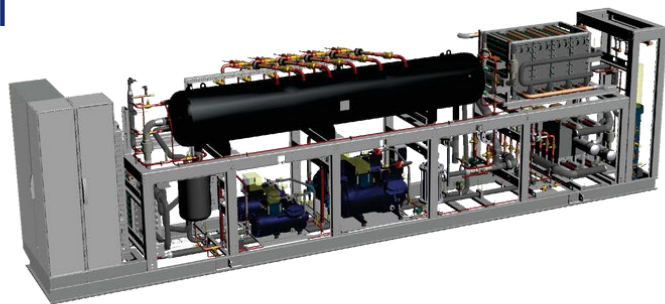


Find your CO₂ heating and cooling solution, from small to high capacities, for diverse applications

Heat **COOL**₂ IL
DISTRICT
HEATING



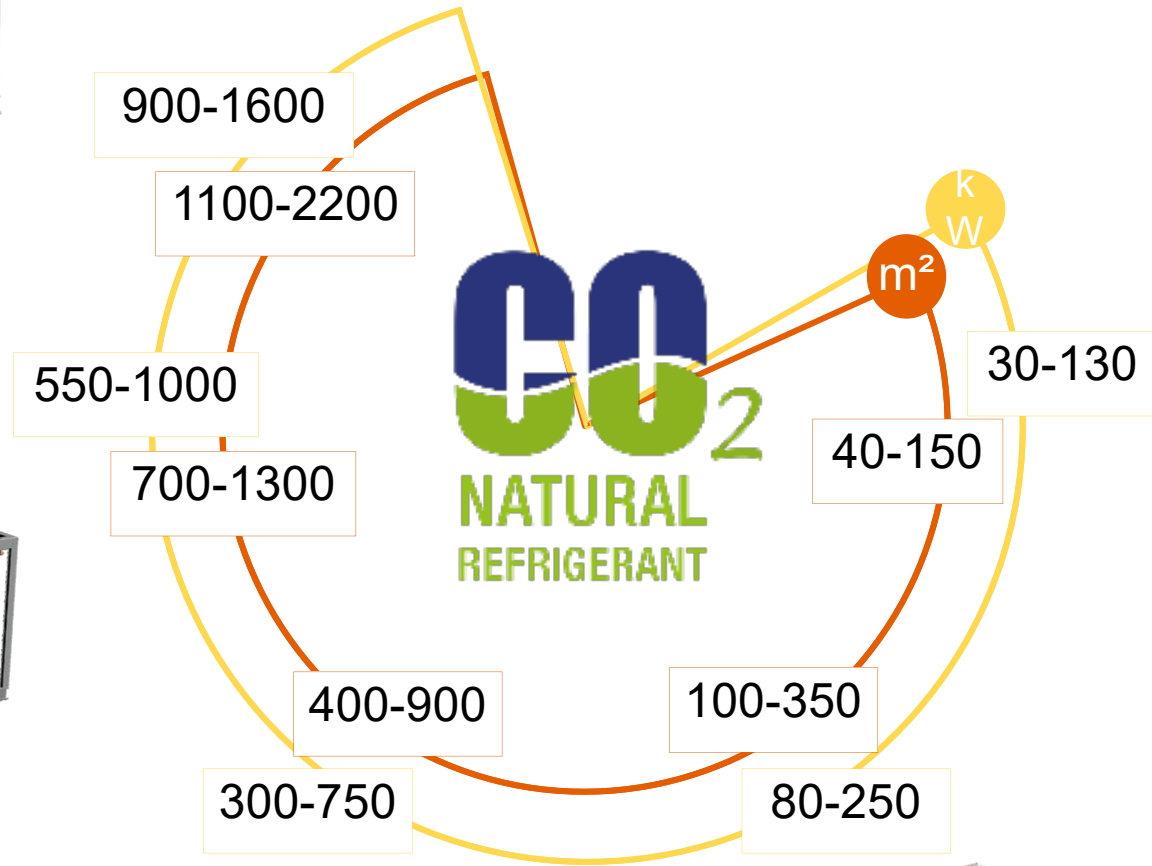
Heat **COOL**₂ IM
APARTMENT
BLOCKS



Heat **COOL**₂ IS
INDUSTRY | HOTEL



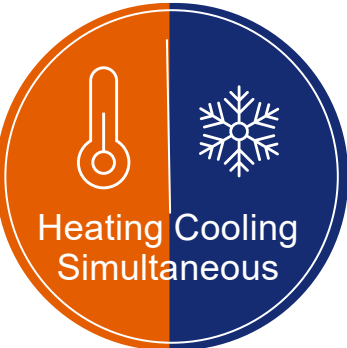
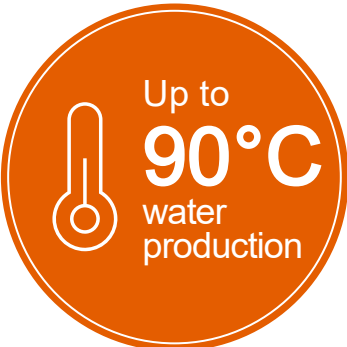
Water source / Air source
Package evaporator / split versions for commercial
AW ranges
Reversible: Heat in winter / AC and domestic hot
water in summer



Heat **COOL**₂ CS
SCHOOL | OFFICES |
COMMERCIAL BUILDING



Heat **COOL**₂ CM
SCHOOL | OFFICES |
HOSTPITAL | HOTEL |
COMMERCIAL BUILDING



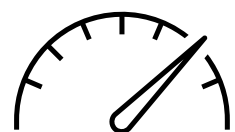
Industrial refrigeration solutions for Distribution Centers



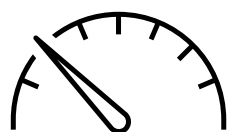
LIDL CHESTE , Spain

Valencia, Spain - Food retail distribution center
18.000 m² of refrigerated surface on a total of 190.000 m³

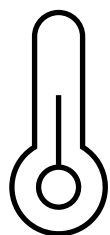
- +5% more efficient than Ammonia
- 55 k€ electricity saving / year
- 25 k€ maintenance cost saving (30%)
- 5-6 years payback



2.650
kW MT



653
kW LT



1000
kW Heat
Recovery



Optimized energy consumption during high temperature peaks



EQUIPMENT

4 PowerCO₂OL



Modulating
ejector

78 evaporators

Flooded
MT / LT

8 Gas coolers



Heat
reclaim

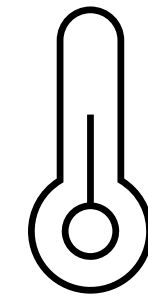
Industrial refrigeration – Water / Air Heat pump - Greenhouse



Summer Berry Greenhouse

United Kingdom

- EBTECH – heat pump partner focused on large scale industrial projects – Previously completed 14MW WSHP project with Carrier HFO
- Fruit product company using large, climate-controlled green houses. Currently using gas fired heating and gas/diesel generators
- Overall project includes CHP plant to provide high temp and power for low temp CO₂ heat pumps
- Drivers: natural refrigerant / efficiency / Dual source



2.5-6.5
MW Heat

Dual source Heat Pump
operating with CHP plant



EQUIPMENT

2 No. 1.25MW HeatCO₂OL

50% Water Source

50% Air Source



Modulating
ejector



0°C □ 15°C



60°C □ 85°C



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EXPERTS.**

